

vitamin K2

a reader question & answer
from Nourished Kitchen



Before You Read this Transcript

This is a transcript of a conversation of Jenny McGruther of Nourished Kitchen and Dr. Kate Rheaume-Bleue, author of *Vitamin K2 and the Calcium Paradox*. Nourished Kitchen readers were invited to email their questions on the proper preparation of whole grains for inclusion in this question and answer session.

You can find the original video, show notes, links and referenced books here:
<http://nourishedkitchen.com/reader-questions-vitamin-k2>

Here's What You'll Learn

- What the calcium paradox is.
- How calcium can actually be harmful (and what to do about it).
- What foods provide us with vitamin K2.
- Which cheeses are best for vitamin K2.
- Who needs to pay extra attention to vitamin K2.
- Which conditions are associated with vitamin K2 deficiency.
- What's the best ratio for calcium, magnesium and vitamin K2 supplementation.
- How vitamin K2 shows promise in cancer research.
- Where to get vitamin K2-rich foods.

Jenny McGruther interviews Dr. Kate on Vitamin K2

Jenny: Hi guys, this is Jenny from nourishkitchen.com, I just want to invite you to this reader question and answer session. Today, we're going to be talking with Dr. Kate Rheaume-Bleue who wrote the book *Vitamin K2 and the Calcium Paradox*.

You can see this book right here. I got it a while back, and I just fell in love with it; I thought was very intelligently written, and also relatable in a way that few other books are.

So, I have Dr. Kate here today, and she is going to be answering some questions that I have about my vitamin K2 as well as some questions that you wrote in. So we are going to get started: can you give us a little background about you and how you got started and interested in Vitamin K2 and why you wrote the book?

Kate: Sure, I'm naturopathic doctor based upon Ontario, and I'm a licensed primary care physician here, and I've had a passion for nutrition my whole life. And, I sort of got interested or tuned

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in to the emerging research about vitamins K2 a few years ago. It really started with reading Weston A Price's book *Nutrition and Physical Degeneration*, and then later on learning a little bit about K2, and having an inkling he talked about that, but not being sure until reading Chris Masterjohn's work linking those two things. And from there, I it has just been a passion of mine that I haven't been able to let go of; it fascinates me everyday.

Jenny: Yeah, it is very fascinating. I think it's a much-neglected nutrient. There is so much focus on getting your calcium in everyday as though it's going to solve all these ills, but what I think we should really consider is how all these nutrients works synergistically together.

I mean they are not they are not found in isolation and probably shouldn't be consumed in isolation. I like the way you discuss how all of these work together in your book. I thought it was a very interesting.

What is the calcium paradox? Can calcium be harmful?

Jenny: So let's get started with the questions that we got. Number one: can you kind of elaborate on what the calcium paradox is? Having read your book, I understand, but a lot of our readers haven't necessarily taken a look at it. So if you could elaborate on exactly what that is? And can calcium even be harmful?

Kate: Well, it can if it winds up in the wrong places in the body and that's really what this calcium paradox is. So we need calcium, and it's an essential nutrient and an essential mineral in our bodies. And it can even be lacking in some areas of our bodies, so lacking in the bones in osteoporosis and lacking in the teeth with dental cavities, and so we take calcium or get it through our diets and some of that goes to right place. But, paradoxically, some of that ends up in places in our body where really does harm us.

So, in arteries, we get heart attacks and strokes, and calcium can deposit in lots of different areas in the body from kidney stones to heel spurs and all kinds of places where it is harmful. So that's really this paradox we have with this nutrient that we need, but if it winds up in the wrong places it can really do us harm. And the fact is that, yes, calcium can get into wrong places, but it is not calcium's fault. We need calcium and how we move it around is with fat-soluble vitamins.

Jenny: Interesting. So fat-soluble vitamins, like vitamin A, Vitamin K2, Vitamin D and of course there is Vitamin E as well. So why don't we talk a little bit more about Vitamin K2. What exactly does vitamin K2 do in the body and how does it work with calcium?

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Kate: Specifically, vitamin K2 moves calcium around, so we use vitamin D to help us absorb calcium. The reason why that's an important benefit of taking vitamin D or getting it from sunshine or our diets, if possible, but once calcium's absorbed vitamin D has no control of where the calcium goes. And that's the role of K2. So, K2 will activate certain proteins in the body, and those will take calcium and guide it into our bones and teeth where we need it. Not only will it prevent calcium from depositing in our organs and soft tissues, but it will even remove calcium from those areas.

So vitamin shown to reverse existing heart disease, resisting arterial plaque which is something that we would have thought before to be impossible.

What foods provide us with vitamin K2?

Jenny: That's really fascinating. So, what are the foods that provide us with vitamin K2?

Kate: It used to be abundant in our diet, and certain foods have the potential of providing us with a lot of K2 depending on how they are produced. So grass-fed foods will be number one source in north America or the western world.

We traditionally would have gotten a lot of K2, especially in the summer time, but, to a lesser extent year-round, from grass-fed animal foods. So this is a fat-soluble vitamin, so obviously we'll find it in the fat. So, egg yolks, butter, dairy products and the fat of animals that were grazed on the pasture. And as we moved animals of the pasture to confinement and grain feeding, then we pretty much did away nutrient-dense, traditional process.

Now there are other foods sources as well, but that would be certain fermented foods that will be high in vitamin K2 like certain cheeses even if the milk that goes into the cheeses is not grass-fed, the bacteria that make the cheese will make vitamin K2. So gouda is one of the highest ones. Brie cheese is another high one. Cheddar has a little bit. It depends on the specific bacteria used to make that. So those are some of the fermented foods.

What cheese cultures are good for vitamin K2?

Jenny: Interesting, I know I think we had a question of one of our readers - I might skip ahead here: she asked where can she get the particular culture to make this cheese that is high in Vitamin K2, so you say gouda, brie and things like that. Very good. What we can do is provide her with some information on exactly where to get starters for gouda and brie and things like that.

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That's very interesting that even if the milk is not pastured or is not from a pastured animal., the actual cultures and then make it rich in vitamin K2. I think that may provide some of our readers with some solace there.

Kate: Yeah, and it is a property of the bacteria so that's why some cheeses are high and others aren't, and why other fermented foods traditionally like natto which is this Japanese fermented foods. I am now told it is extremely high in vitamin K2, but miso, for example, which is another fermented soy food doesn't have any. So it really is a matter of which bacteria is doing the fermenting and they'll make the K2.

Who should pay greater attention to vitamin K2 intake?

Jenny: Fascinating. Anyway, are there any particular people who should pay greater attention to vitamin K2 intake or is it something we should all pay attention to?

Kate: Well, we really all should, because it has so many health benefits, plays so many roles in the body, and because it is become so hard to get in our diets naturally that we all benefit from paying attention to it. But I could argue that perhaps women who are pregnant or breastfeeding, people who are trying to conceive – so for fertility, vitamin K2 plays very important roles here. Children, maybe even more so than adults, for their growing bones and growing bodies need lots of vitamin K2, and the adolescent period is the especially important when hormones kick in and the skeleton starts to grow that's the time we may need more of this nutrient. And then again at menopause with draw of estrogen, osteoporosis becomes a greater concern and vitamin K2 has been shown to prevent and compensate for the changes in the bone density seen at menopause. So, I guess that kind of just covered the whole lifespan there. So pretty much everybody, but there are certain critical periods.

Jenny: I understand. You had addressed other there is special need for reproductive age and how during adolescents special need: what I find, personally and in working with a lot of readers who come to nourished kitchen, is that many people in their adolescence found vegan diets, low fat vegetarian diets and adopted those diets to be healthy, because they were told that butter's bad and that egg yolks are bad for you. And that you shouldn't eat too much cheese, because that's bad. And what we are finding is that these are these are precisely the foods that are rich and this fat-soluble vitamin. Is there any hope of recovery if you have been adhering to a diet which is essentially devoid of these fat-soluble activators and nutrients. What opportunities is there for recovery?

Kate: I think there is a lot of opportunity to recover. The body has a remarkable healing ability, and, especially, with vitamin K2, because its action is so specific by the way it activates these pro-

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teins then moves calcium around. The body will start to heal as soon as this nutrient is increased in the diet. And now that might not always be obvious, because you can't necessarily tell by looking at somebody that their bone density is improving or their calcium plaques are declining or these other things, but I think there is a remarkable ability to heal and recover and restore the body to full health.

What conditions are associated with vitamin K2 deficiency?

Jenny: I know in that in your book you discuss how deficiency of vitamin K2 is implicated in a lot of chronic conditions. The ones that come to my mind are cardiovascular disease, infertility and I know that that's something that I struggled with. We're very fortunate to have conceived our son. I had been told that it wasn't possible, and I can get into that story a little bit later for my readers, but I know that I hear from many woman who experience similar stories: inability to conceive, unexplained infertility, their parents have cardiovascular disease. What other conditions are associated with insufficiencies or deficient levels of Vitamin K2?

Kate: Osteoporosis and heart disease are probably two big ones, and those are the most obvious aspects of the calcium paradox – so lacking calcium and having too much calcium in the wrong places, but type 2 diabetes and we know there's an epidemic of that upon us, alzheimer's disease, gum disease. And we know that there is direct link between say gum disease and heart disease. Proper facial development in children - so this epidemic is quite common, this facial and orthodontic deformity that kids have don't have faces wide enough for all their teeth and so canines usually come in front or behind crooked and that needs to be corrected. These are all connected with vitamin K2. I was surprised by the amount of cancer research and I found - a number of cancers, lung and prostate which were the two biggest cancer killers for men, but breast and leukemia as well, and the list just went on and on vitamin K2.

What's the relationship between vitamin K2, vitamin K1 and cancer?

Jenny: That's interesting that you mentioned cancer, I recall having read a study maybe it was one or two years ago where the researchers actually looked at vitamin K1 and its relationship to cancer and vitamin K2 and its relationship, and found that vitamin K1 in their study didn't really mitigate the risk of cancer but vitamin K2 did.

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Kate: That's right. You see that a lot of health benefits with cancer, with diabetes. There are even bone health, that both of the forms of the K vitamins have been examined. K1 – really it's only role is in blood clotting and K2 is the one that has all these other important health benefits.

Jenny: So eat you greens with butter is what you are saying.

Kate: Yes, right.

What's the best ratio for calcium, magnesium and K2 supplementation?

Jenny: We are going to move on to some of the reader questions that emailed in, so let me read them to you. Rana she wrote to me and asked, "What is the best ratio for supplementing with calcium and magnesium and vitamin K2?" So what are your thoughts on supplementation, ratios and things like that?

Kate: I do not recommend calcium supplements from most people or for everybody. I think that the more important thing is to make sure that calcium from our diets is getting to where it's supposed to go, and certainly there are cultures that we see that don't even have particularly high calcium diets like the Japanese but they have a lot of K2 and fat-soluble vitamins. And so even if dairy products, for example, are not part of their cultural diets, they can have very strong bones.

So, with calcium if you do have osteoporosis, osteopenia or a condition where you really feel like you want to take calcium supplements. I would say no more than maybe 500 or 600 milligrams per day and that's a lot lower than the 1200 to 1500 or even 2000 milligrams that's been recommended. So, 500 to 600 milligrams of calcium. With that you want to have either two-to-one or one-to-one ratio, so 300 to 600 milligram of magnesium because you really need the calcium and magnesium together to balance one another. If you choose not to take a calcium supplement, some people still find that magnesium is one that's hard to get enough of in their diet, so they take supplement on its own. In terms optimal dosages or amounts of vitamin K2, we have seen benefits in dietary and epidemiological studies in as little as 45 micrograms per day, but a lot of clinical trials are looking more at 120, 100 to 200 micrograms probably somewhere around 150 to 180 range of micrograms for vitamin K2. And of course that is the natural either grass-fed or bacterial produced form of vitamin K2.

If I eat ghee, do I need to take high-vitamin butter oi?

Jenny: Sahara writes, "I consume grass fed ghee a lot so I never buy the butter oil with my fermented cod liver oil. Am I still a decent amount of vitamin K2 from the ghee. I have heard differing opinions on the heating process to manufacture ghee."

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She is concerned about the heat that is used in the manufacturing process in that it could possibly destroy vitamin K2, but this is how many traditional cultures would have consumed grass-fed butter. So she has this conflicted feeling. Can you elaborate on whether to not you need to consume the butter oil or just the ghee, or address some of her concerns?

Kate: I think for these people who are trying as hard as they can to get their vitamin K2 from foods, these are the two big sources and there are a lot of questions about if one is better than the other. Given the fact that for both grass-fed ghee and butter oil, neither of them have the K2 content tested. They're not testing, and measuring and putting the K2 content on there. So these are both foods; however I think that you are getting enough K2 – and optimal amounts of K2 - with your grass-fed ghee, and don't think you need to take butter oil on top of that. It can be one or the other. I know that people have said, "Well maybe the ghee is being heated too much." The ghee is made according to traditional principles that people have always used to make ghee - separating it and heating it at low temperatures, and following essentially the same recipe that Dr. Weston A Price did when he made his butter oil. I think that the ghee is just as good, and until someone can do a K2 analysis to indicate otherwise, the grass-fed ghee is an excellent source of vitamin K2.

Jenny: I think that is going to come as great relief to a lot of the readers who find that the butter oil can be outside of the price and budget.

Kate: It's seven times the price of the grass-fed ghee. From the investigations I did, it really should provide the same benefits and the same nutrients.

Which form of vitamin K2 is more important for heart health?

Jenny: If that's true, that's going to be a great relief to many people to hear that. Anyway, I am going to follow up. Lidia writes, "Is K2MK4 or K2MK7 more important for heart health." Now, that's beyond me so ...

Kate: This is a good question, so for the K2 keepers, you know that there is a lot of different types of vitamin K2, but two main ones that you will see in supplements or that we'll find in foods. If we're talking about supplements - MK4, menaquinone-4 is a synthetic form of vitamin K2.

Whatever your position is on synthetic versus natural, there has been a lot of studies done on MK4. It's good for bone health - more so for bone and less heart health studies. However the MK7, this would be considered a natural and bacterial derived (this comes from natto – a fermented Japanese soybean food). There is just as much research to say that they are both helpful for heart health.

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MK7 is a natural form. It's more effective in smaller doses, and you can take this in a once-a-day dose instead of having to divide it; that's a big difference.

Now, MK4 is also the type of vitamin K2 you will find in grass-fed foods, but that's a natural type of MK4. So that gets a little bit confusing, but I think we don't know if one is better than the other for heart health, they are doing more studies now on MK7 for heart health and the biggest clinical trial that's happening in the Netherlands about vitamin K2 and heart health is using MK7. So that is the one I tend to prefer.

Where the heck do I get natto?

Jenny: Excellent, and then of course Christine writes, "Where the heck does one buy natto?" So, where do you buy your vitamin K2-rich foods?

Kate: That's a good question, Christine. It depends on where you live. I live outside Toronto, and I still had a heck of a time finding natto. I ended up finally finding it at a Japanese restaurant. They had some on the menu, and so I was able to order from the owner. He would bring it in for me, and I would get my little Styrofoam containers full of natto, and that's how I started to learn to eat it. Maybe I can you mine Christine, because my freezer's still full and I'm still working on it. So if you really can't find it in any store, try a Japanese restaurant if there is one near you. They might have it, or they might be able to get it for you.

Jenny: That's good advice. You could actually also make your own. I know that some of our readers are hardcore do-it-yourselfers, so for those who have an interest, I think that Cultures for Health might sell natto starters. I had good success in making natto; there is learning curve to it, and you really have to like the stuff in order to make it. I think one of the favorite things that we do in my home is we serve natto and fish roe together for a really quick, nutrient-dense meal.

Kate: That should be jam-packed with vitamin K2.

Jenny: It's not for everybody, but that's what we do at our house.

Why did you write this book?

Jenny: And finally I just want to know, why did you write this book? Was it just because this has been ignored for so long? I really found it to be refreshing. I found it to be really refreshing take. And it seems so impeccably researched which is why I wanted to interview you. I thought it was impeccably researched, but still very relatable. So why did you write the book?

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Kate: There were lots of reasons, one because I was just so fascinated with K2 and Price's work - how he had this whole body of knowledge published essentially about K2, even before the people who supposedly discovered it won their Nobel prize, and the fact that there was actually so much research out there, but the health benefits of K2 that had never been compiled. Very few people were even talking about it, and I wanted to bring both that information the people who were already the aware of K2 and trying to get it into their diet, as well as trying to bring some of like initial principles of traditional diets to the general public (the calcium supplement takers, the people who wouldn't know about his at all. So I guess in sense to try to make a cross over but really the fact this was such important information that had not been discussed or even come to light.

Jenny: Yeah, I mean it really hasn't been discussed. Not many people are talking about it. I see it as a such a important aspect of systematic wellness that has been just ignored for such a long time. People are focused on supplements and keep saying, "Take your calcium, take your calcium." How about we just go back to some whole goods?

Kate: The idea that you can reverse heart disease?!?

Jenny: That's amazing! It's beautiful that vitamin K2 can work in this way to not only provide us with optimal health, but also to reverse those conditions as well. It's a beautiful thing, I think, when we find that these traditional diets can provide us with so much, and they just taste so good too. I mean butter just tastes really good. It's a beautiful combination the way these nutrients work synergistically together.

Who should read *Vitamin K2 and the Calcium Paradox*?

Jenny: And lastly who would you recommend should read your book. The calcium supplement takers, obviously. In reading your book, I saw that I would love for parents of small children and those trying to conceive to read this book. That's who I would recommend read the book, but I am interested in your perspective as well.

Kate: That would be my number one. I would love if this information got out to those who are trying to plan family or have small children or for the next generation - for growing a healthier next generation, but certainly anybody who is taking calcium or vitamin D or anybody who has concerns of those bone health, heart health.

There is a lot of people out there who have been told their cholesterol is high. They're wondering, "Is that concern? Should I take the meds. I took the meds and had a bad side effect, what do I do?" So trying to put cholesterol in perspective. Diabetes is another big one. And there's a number of cancer concerns. For anybody who has these kinds of health concerns, the book would

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help to put in a missing piece to the picture.

Jenny: I can see that; it has a lot of applications. Thank you so much, and I really appreciate your time. Thanks for answering some of the reader questions as well.

Kate: Thank you, it has been a pleasure.

Jenny: Alright. Take care. And, guys, Dr. Kate wrote the book Vitamin K₂ and the calcium paradox, you can see it here. I will also include a link on it when the video is posted and thank you guys so much for your time. Bye-bye.